

tions and the mutual relations of the heavenly bodies have been investigated, and of the results of such investigation, while in the last two the individual peculiarities of those bodies are considered in greater detail. The subject of the general structure and probable development of the universe, which, in strictness, might be considered as belonging to the first part, is, of necessity, treated last of all, because it requires all the light that can be thrown upon it from every available source. Matter admitting of presentation in tabular form has, for the most part, been collected in the Appendix, where will be found a number of brief articles for the use of both the general reader and the amateur astronomer.

The author has to acknowledge the honor done him by several eminent astronomers in making his work more complete and interesting by their contributions. Owing to the great interest which now attaches to the question of the constitution of the sun, and the rapidity with which our knowledge in this direction is advancing, it was deemed desirable to present the latest views of the most distinguished investigators of this subject from their own pens. Four of these gentlemen—Rev. Father Secchi, of Rome; M. Faye, of Paris; Professor Young, of Dartmouth College; and Professor Langley, of Allegheny Observatory—have, at the author's request, presented brief expositions of their theories, which will be found in their own language in the chapter on the sun.

An Addendum gives the basis of the remarkable modification of the theory of the solar spectrum proposed by Dr. Henry Draper, which appeared while the sheets were passing through the press.

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